

Solar School Buses a “Disruptive Innovation” to Reduce Emissions, Protect Lungs

California’s Santa Clara County, home to Silicon Valley, Santa Cruz beaches and a diverse population across the economic spectrum, received a “D” in two out of three air quality indicators in the American Lung Association’s 2014 State of the Air report. Transportation is a major source of greenhouse gas emissions in California and a leading contributor to air pollution. So Breathe California of the Bay Area (Breathe CA), together with a select, cross-sector team of partners, embarked on an innovative strategy to eliminate some of that diesel pollution. They’re piloting an electric school bus, with a plan to create a solar-powered bus fleet for the Gilroy Unified School District that could spark change around the country.

Breathe California was founded in 1911 to address tuberculosis, moved on to asthma and other respiratory diseases, and has been combatting cigarette smoking for decades. Wildfires brought home the connection between climate change and respiratory disease. “I ended up in the Kaiser ER for the first time in my life because of the Santa Clara fires,” said Breathe CA’s CEO, Margo Sidener. The organization quickly began to recognize the broader lung threats of climate change, such as increased ozone levels and more ragweed pollens. It was time to engage. “We look for what’s coming down the road, and we help communities to mobilize,” says Sidener.

Through its Seniors Breathe Easy program and its Youth for a Cool Earth, Breathe CA is engaging seniors and youth to become environmental ambassadors and advocates. “Seniors and youth seem way more interested in the environment than the rest of us,” observes Sidener. Breathe CA and its cadre of volunteers has played an important role in passing local transportation policies to improve air quality.

In May, 2014 Breathe CA, the Gilroy Unified School District, and their partners unveiled the first bus in California to be converted from a regular yellow diesel school bus into an electric bus. Soon up to 25% of the bus’s power



“We look for what’s coming down the road, and we help communities to mobilize.”



The electric school bus highlights the power of innovative thinking and of multiple 'wins', as we transition transportation and other systems to protect our climate and our health.

needs will come from a solar grid on site at school. The plan is to convert the school district's entire fleet. The prototype bus began transporting Gilroy students to school that fall.

Initial funding for the project came from a "disruptive innovation" grant from the Santa Clara Health Trust. Technical expertise was donated in kind, as was the financial expertise to calculate return on investment, bringing investors on board as well as helping to make the case to the school district. Despite up-front conversion costs, the buses will save the school district money. The district currently spends roughly \$17,000 per bus per year on fuel. Converting to electric reduces that cost, and installing on-site solar grids to provide a portion of the power saves even more. Social impact investment will pay for the initial bus conversions, to be repaid out of the cost savings; schools will be able to direct the remainder of the savings to other needs. To ensure that the newly converted buses will be well maintained and that the project doesn't threaten jobs, current bus maintenance staff will be trained to care for the new engines — making these workers part of the new, green economy. This broad, multifaceted approach is the "disruptive innovation" that could make this project an important model nationwide.

For the children of Gilroy who ride the newly converted electric buses, the health benefits will be immediate: they'll no longer have to breathe the diesel fumes that seep inside on a regular bus. The electric school bus is a testament to the power of cross-sector partnerships, innovative thinking, and the importance of multiple 'wins', as we transition transportation and other systems to protect our climate and our health.

For more information:

Breathe California of the Bay Area: www.lungsrus.org/BreatheCA



Center for
Climate Change & Health

The **Center for Climate Change and Health** draws upon the significant technical, advocacy and research capacities of the Public Health Institute to address one of the most vital and pressing issues of the day—the impacts of climate change on human health.

For more information about our work, please visit our website at www.ClimateHealthConnect.org.